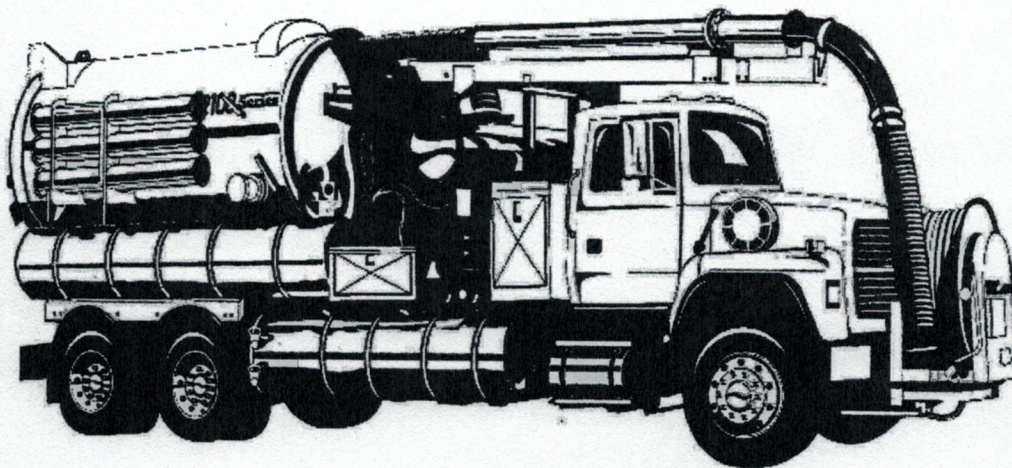


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# Brookville Municipal Authority

Vactor 2100 Series



**VACTOR**  
AUTOMATIC STREET CLEANING SYSTEMS

Presented By:

**A & H Equipment Company**

1124 McLaughlin Run Road

Bridgeville, PA 15017

412-257-1160, fax 412-257-4471

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# A&H Equipment & Sign Company

412-257-1160 or 1-800-753-7566

Fax: 412-257-4471

Please call any or all of us for service, assistance or advice

**WE ARE DEPENDENT ON YOU** for our livelihood.

We would like you to feel that **YOU CAN DEPEND ON US**  
for your equipment, parts, and service needs.

Grace Amick	C.E.O.	110
Tripp Amick	President	130
Allan Echko	C.O.O.	135
Maureen Strahl	Controller	120
Kristen Coleman	Adm. Assistant	100

## **SALES DEPARTMENT**

Howard Rees	Sales Manager	140
Shelley Wellman	Customer Support	150
Jim Ahlborn	Sales Representative	183
Steve Sebastian	Sales Representative	187
Jeff Cumming	Sales Representative	182
Brent Evans	Sales Representative – Ohio	185

## **SERVICE DEPARTMENT** (Including Contract Services)

Steve Leasher	Service Manager	210
John Fritch	Mechanic	210
Earl Greenawald	Mechanic	210
Jeff Lakes	Mechanic	210
John McAvoy	Mechanic	210
Larry Waterman	Mechanic	210

## **PARTS DEPARTMENT**

Cheryl Carroll	Parts Dept. Manager	190
Bill Escott	Parts Representative	160
Duke Hoffman	Parts Representative	170
Steve Carroll	Parts Representative (Ohio)	412-475-4090

## **SIGN DEPARTMENT**

Donna Leasher	Sign Dept. Manager	252
Jim McKindley	Sign Technician	260
Bob Corson	Sign Technician	270



# A & H Equipment Company

## Customer Service Delivery Survey

Our goal at A & H Equipment is *TOTAL CUSTOMER SATISFACTION*. A critical component of this process is the initial delivery of the product to you, our customer. Please rate us on our initial performance against the following criteria and fax it back to us at 412-257-4471. Thank you in advance for your feedback.

Company Name: \_\_\_\_\_ Model: \_\_\_\_\_ Unit S/N: \_\_\_\_\_

Your Name / Title: \_\_\_\_\_ Phone #: \_\_\_\_\_

Please circle the number that best describes your level of satisfaction and add any applicable comments.

	<i>Very Satisfied</i>		<i>Satisfied</i>		<i>Very Dissatisfied</i>
On Time Delivery Comments:	1	2	3	4	5
Equipped as Ordered/Accurate Contents Comments:	1	2	3	4	5
Overall Appearance - Inside Comments:	1	2	3	4	5
Overall Appearance - Outside Comments:	1	2	3	4	5
Systems Functioned Properly Comments:	1	2	3	4	5
Operational Procedures Covered Comments:	1	2	3	4	5
Maintenance Procedures Covered Comments:	1	2	3	4	5
Warranty Programs Presented Comments:	1	2	3	4	5
Mfg's Parts & Service Manuals Presented Comments:	1	2	3	4	5
Overall Degree of Courtesy Comments:	1	2	3	4	5



# THANK YOU!

## Brookville Municipal Authority

You are the proud owner of a VACTOR Combination Sewer Machine, Model 2110, S/N 02-11V-8357. We at A & H EQUIPMENT COMPANY are committed to keeping your VACTOR working for years to come.

***Our goal is to PROTECT your investment, MINIMIZE your down time, and MAKE YOUR LIFE A LITTLE EASIER!***

To help make this happen, we offer the following programs and services:

I. PARTS AND SERVICE TECHNICAL SUPPORT

We have 40 years experience as well as "hot lines" to the manufacturer!

### ***OUR PARTS EXPERTS***

**Bill Escott:** Bill has been with A & H for over 20 years. He has considerable experience, both as a Mechanic in our Service Shop and as a Parts Specialist. He can "trouble shoot" your parts needs over the phone, or help you diagnose your parts problems face to face.

**Duke Hoffman:** Duke has been involved with the A & H Parts Department for close to fifteen years. He prides himself on his ability to develop friendships with his customers. Duke knows the manufacturers that we represent very well. He can help get that critical part to you when you need it.

**Steve Carroll:** Steve Carroll is an outside salesperson dedicated to the Parts Department. He has literally "grown up" in the business. Steve sells from our traveling truck inventory. He exemplifies A & H's commitment to get you, the customer, what you want when you want it.

**Cheryl Carroll:** Cheryl is the Parts Department Manager. She has been involved with A & H her entire life. Cheryl manages the Parts Department to be responsive to your requests, to anticipate your needs and to exceed your expectations.

FOR ALL YOUR PARTS NEEDS contact A & H PARTS DEPARTMENT  
by phone, fax, or just stop in!  
PHONE 800-753-7566 412-257-1160 FAX 412-257-4471



# **THANK YOU!**

Brookville Municipal Authority  
VACTOR 2110, S/N 02-11V-8357

II. ON - GOING TRAINING AND SUPPORT

Have a new operator or mechanic? Give us a call and we'll get them up to speed!  
Need technical support? Ask us about our Planned Maintenance Contract Service.

III. 24 HOUR PARTS AVAILABILITY

Just call our main numbers and follow the menu!

IV. WE HAVE HISTORY!

We have been selling and supporting this equipment to customers like you for 40 years.

We know what you need!

FOR ALL YOUR PARTS NEEDS contact A & H PARTS DEPARTMENT  
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**TECHNICAL SPECIFICATION**  
**CONTRACT NO. MA-2002-3**  
**COMBINATION SEWER JET & VACUUM CLEANER TRUCK**

**1.0 GENERAL**

The following are the minimum specifications to be considered by the Brookville Municipal Authority (Owner) for purchase of a new and unused Combination Sewer Jet & Vacuum Cleaner Truck.

These specifications are intended to provide the information which all prospective bidders may understand the requirements relative to the furnishing and delivering of this vehicle.

Any specifications and/or brand names are intended as a guideline for strength and size, but will be the minimum accepted by the Owner. Any deviation from these specifications must be so stated on a separate letter accompanying the bid. The letter should state the bidders closest equivalent for the Owner's consideration. If no letter is submitted, it will be clearly understood that all requirements will be to order at the time of delivery.

Bidders must be a registered dealer of the truck manufacturer in the Commonwealth of Pennsylvania. The truck must have a valid Pennsylvania inspection sticker and be serviced, cleaned, and delivered to the Owner's Wastewater Treatment Plant at 30 Darrah Street in Brookville Borough, Pennsylvania. One complete set of service and repair manuals shall be supplied with the vehicle.

For a bid to be considered, a complete breakdown of the chassis, warranty, body, mechanical on-board equipment and other itemized options must be included with the bid. Failure to include this information will be cause for rejection of the bid.

The Brookville Municipal Authority hereby reserves the right, which is understood and agreed to by all Bidders, to reject any or all Bids submitted; and also reserves the right to waive any informality in bids received, but any contract work awarded will be to the lowest, responsive, responsible Bidder. Except as otherwise provided by law, no Bidder may withdraw his bid within 60 days after the actual date of the Bid Opening.

All bids must be submitted in a sealed envelope and clearly marked "Bid for Combination Sewer Jet & Vacuum Cleaner

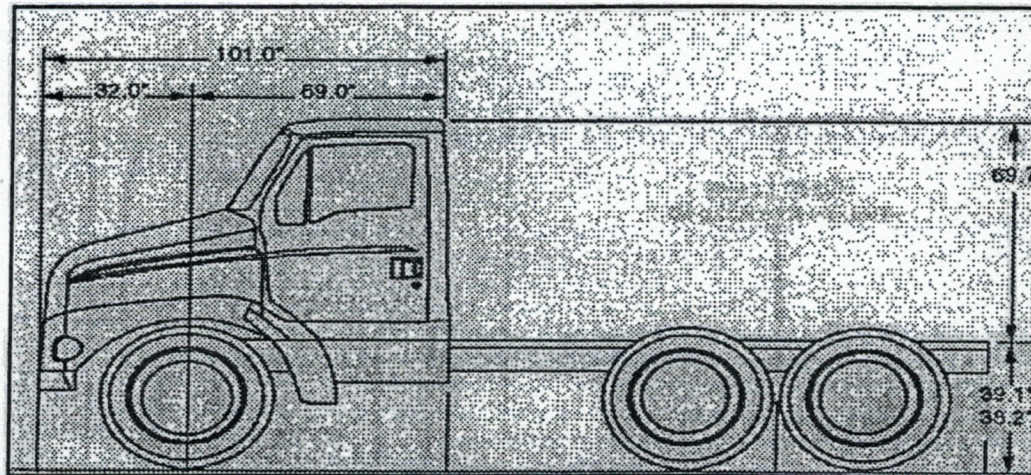


Truck" on the exterior of the envelope. All bids must be provided on the forms supplied by the Owner.

Location of the parts and service department will be considered in the bid award as well as previous experience in obtaining service.

### 1.1 TRUCK & CHASIS SPECIFICATIONS

The minimum specification for the vehicle shall be as follows:



#### GENERAL- Cat. No.

- Model VACTOR 101", BBC Mid-Range 6X4 (LT7501) or Equal.
- Wheel Base WB = 243", CA = 174", AF = 90"
- Engine Cat 3126 Electronic, 300 HP, 2400 RPM
- Transmission Allison MD-3066P, 6-Speed Electronic
- Front Axle 20,000 lb. Front Axle
- Rear Axle 40,000 lb. Meritor RT.-40-145, Steel 1S
- Axle Ratio 6.43
- GAWR Front: 20,000 lb. Rear: 40,000 lb.
- GVWR Frame: 64,000 lb., Total: 60,000 lb.
- Est. Weight Front: 8,106 lb., Rear: 7,546 lb.



ELECTRONIC ENGINE CONTROL

- EC6-001 Soft Cruise Control

ENGINE EQUIPMENT

- 101-1HY Cat 3126B-300/-300 hp @ 2200 rpm; 2400 Gov. rpm; 800 LB/FT @ 1440 rpm 98 EPA/CARB
- 105-001 Oil Check & Fill: Engine Mounted
- 014-072 Air Intake: Dual Through LH & RH Sides Of Hood W/Firewall Mounted Donaldson Air Cleaner
- 190-001 Air Cleaner: Donaldson 1-Stage
- 124-080 Alternator: 130 AMP Delco 22-SI
- 292-097 Batteries: (2) 12V Alliance G31, 1900 CCA W/Stud Posts
- 290-080 Battery Box: Steel Frame Mounted LH Aft Of Cab ,W/Long Side To Rail
- 291-001 Extended Battery Cables 5 Feet
- 107-015 Compressor: Bendix 13.2 CFM Series 550
- 108-002 Compressor Governor
- 152-040 Engine Protection: Electronic Engine-Integral Warning System & Derate
- 016-011 Exhaust: Single RH Stationary, Vertical Cab Mounted
- 239-123 Exhaust height 10' 3"
- 237-051 Exhaust Piping: Curved Tail Pipe
- 242-011 Muffler Shield: Aluminum Muffler/Tail Pipe Shield
- 273-019 Fan Drive: Kysor K22RA On/Off Rear Air Engine
- 110-008 Fuel Filter: Spin On



ENGINE EQUIPMENT (Continued)

- 118-001 Full Flow Oil Filter
- 266-042 Radiator: 830 Sq. In. Copper/Brass  
W/Additional Cooling Capacity
- 103-036 Heavy Duty Coolant: Ethylene Glycol,  
Pre-Charged SCA To -30F
- 171-007 Coolant Hose: Gates Blue Stripe Hoses  
Where Possible
- 172-001 Constant Torque Clamps: Constant  
Torque For Coolant Hose, 1" Inside  
Diameter & Larger
- 270-010 Radiator Draincock
- 134-002 Flywheel Housing: Iron
- 132-001 Glow Plug: Air Intake
- 155-029 Starter: Delco 12V, 41 MT 400 Warmer  
Series Type Front Engine Mounts
- 109-004 Engine Supports: Compression

TRANSMISSION & EQUIPMENT

- 342-462 Transmission: Allison MD3066P, 6  
Speed, Automatic
- 343-060 Premium Utility 6 Speed ECU
- 353-001 Transmission Vehicle Interface
- 341-018 Fill/Drain Plug: Magnetic Plugs,  
Engine Drain,
- 345-006 Shift Lever: Electronic, Transmission  
Tunnel/Floor Mounted
- 370-016 Transmission Oil Cooler: (1) Water-To-  
Oil, (1) Air-To-Oil, Transmission  
Mounted
- 344-001 Transmission Rear Support



FRONT AXLE & SUSPENSION

- 400-1AC Meritor MFS 20133A @ 20,000 lb
- 402-030 Front Brakes: Meritor Cam 16. 5X6 Q+
- 403-002 Front Brake Linings: Non-Asbestos
- 419-008 Front Brake Drums: Outboard Mounted, Cast Iron
- 427-001 Front Brake Dust Shields
- 409-001 Front Oil Seals: Stemco Guardian High Performance
- 405-008 Front Auto Slack Adjusters: Gunite
- 536-017 TRW-TAS-65 Gear W/RCS55 Aux. Gear
- 539-003 Power Steering Pump
- 534-001 Power Steering Reservoir: 2 Qt.
- 533-001 Steering Cooler: Oil/Air
- 620-006 Front Suspension: Flat Leaf, 20,000#
- 619-001 Spring Pin Bushings: Bronze
- 406-001 King Pin Bushings: Standard

REAR AXLE & SUSPENSION

- 420-101 Rear Axle: Meritor RT-40-145, 40,000#
- 421-643 6.43 Rear Axle Ratio
- 424-003 Rear Axle Carrier Housing: Iron W/Heavy Duty Axle
- 386-002 Main Drive Line: Dana Spicer 1710 HD W/Half- Round Yokes
- 388-005 I/A Drive Line: Dana Spicer 1710 W/Half Round Yokes
- 423-020 Rear Brakes: Meritor Cam 16.5X7 Q+
- 433-002 Rear Brake Linings: Non-Asbestos



REAR AXLE & SUSPENSION (Continued)

- 451-023 Rear Brake Drums: Conmet Cast Iron,  
Machine Balanced Outboard Mounted
- 435-002 Rear Brake Dust Shields
- 440-001 Rear Axle Oil Seals: Chicago Rawhide
- 426-030 Parking Brake Chambers: Midland TR Two  
Axle
- 428-008 Rear Auto Slack Adjusters: Gunitite
- 622-1CH Rear Suspension, 40,000# Hendrickson  
RT403
- 621-016 Rear Suspension Ride Height: 7.19"
- 431-998 Axle Clamp: No Axle Clamp Group
- 624-011 Rear Axle Spacing: 52"
- 628-005 Steel Beams & Bronze Center Bushings  
W/Bar Pin Adjustable End Conn.
- 623-005 Rear Susp. Control Rods: Fore/Aft

BRAKE SYSTEM EQUIPMENT

- 490-100 Anti-Lock Braking System: Meritor-  
Wabco- 4 Sensor/4 Modulator
- 871-001 Chassis Air Lines: Reinforced Nylon,  
Fabric Braided And Wire Braided
- 412-001 Brake Valves; Standard Relay Valve  
W/3-4.5 PSI Wire Braided
- 432-012 Rear Service Brake Valve: Combo ABS  
W/4 psi Crack Pressure
- 460-001 Air Reservoirs: Steel
- 477-011 Air Tank Drain Valves: Petcock On All  
Air Tanks



CHASSIS EQUIPMENT

- 556-999 Courier
- 551-007 Chassis Fasteners: Grade 8 Frame Fasteners

FRAMES & WHEELBASE

- 545-617 243" Wheel Base/174" CT
- 546-017 Frame: 3/8" x 3-3/16" x 10-1/4" Steel
- 548-006 Outer Frame Reinforcement: 1/4" x 3-7/16" x 10-3/4" C- Channel
- 552-054 90" Overhang
- 553-001 End Frame: Square
- 562-003 Midship Cross Member: Steel C-Channel W/Bolted Construction
- 572-001 Rearmost Cross Member; Standard
- 565-001 Suspension Cross Member

FUEL TANKS & EQUIPMENT

- 206-033 RH Fuel Tank: 55 Gallon/208 Liter, Rectangular, Steel
- 204-033 LH Fuel Tank: 55 Gallon/208 Liter, Rectangular, Steel
- 218-005 Fuel Tank: Rectangular Steel
- 20C-001 Fuel Tank Bracket Material:
- 215-005 Fuel Tank & Band Finish; Plain Aluminum/Painted Steel Fuel Tank with Painted Bands
- 212-007 Fuel Tank Location: Forward
- 216-020 Fuel System: Equiflo Inboard
- 202-001 Fuel Hose: Braided Fabric Reinforced



Brookville Municipal Authority  
Contract No. MA-2002-3

FRONT TIRES, HUBS & WHEELS

- 093-439 Michelin XTE2, 425/65R 22.5, 20 Ply,  
22,800# Rating
- 418-005 Front Hubs: Hayes Lemmerz, Iron
- 502-434 Front Wheels: 22.5x12.25 Stl Acc HP10,  
Part Number
- 496-004 Front Wheel Nuts: Metform 39702,  
33 mm/1.30" H-P

REAR DRIVE TIRES, HUBS, & WHEELS

- 094-251 Michelin XDN 11R22.5, 14 Ply, 23,000#  
Rating
- 450-001 Rear Hubs: Con Met Aluminum
- 505-418 Rear Wheels: 22.5 X 8.25 Stl Acc HP10
- 497-004 Rear Wheel Nuts: Metform 39702,  
33 mm/1.30" H-P

CAB EXTERIOR

- 829-050 Cab: 101" BBC Conventional Steel
- 784-998 Roof Fairing: None
- 650-009 Cab Mounts: Rubber
- 754-005 Fender Extensions: 5"
- 678-001 Grab Handles: LH/RH
- 646-009 Grille: Painted Plastic, Hood Mounted
- 644-001 Hood: Aerodynamic
- 726-001 Electric Horn: Single
- 312-008 Headlights-Single Round W/O Bezel
- 302-005 Marker Lights: Aerodynamic, Small
- 294-030 Stop/Tail/Turn Lights: Grote, Flush  
Mounted Inside Frame Rail



CAB EXTERIOR (Continued)

- 300-015 Turn Signal: Front Lamps
- 744-006 Primary Mirrors: Painted 7" X 16" West Coast
- 797-001 Door Mounting Of Mirrors
- 796-002 Trailer/Body Width: 96" For Mirrors
- 743-133 Auxiliary Mirrors: LH/RH 5.5 Painted Convex Mounted Below Primary Mirrors
- 768-019 Rear Window: (2) 15" X 26" Tinted
- 661-004 Door Windows: Tinted W/Operating Door Wing Window
- 654-003 Window Regulators: Manual
- 663-013 Windshield: Tinted
- 659-007 Windshield Washer Reservoir: 8 Liter

CAB INTERIOR

- 707-05A Interior: Value Sahara
- 706-013 LH Upper Door Trim: Molded Plastic
- 708-013 RH Upper Door Trim: Molded Plastic
- 772-020 Floor Mats: Dark Taupe Vinyl W/Single Insulation
- 785-001 Dash Mounted Ash Trays & Lighter
- 693-023 Storage Pockets: Map Left door
- 741-019 Coat Hook(s): Cab
- 700-002 Heater & Defroster: W/Air
- 170-016 Heater Plumbing: Standard W/Shut-Off Valves
- 130-003 A/C Compressor: Sanden Compact
- 698-001 A/C Condenser: Radiator Mounted



CAB INTERIOR (Continued)

- 702-002 A/C Plumbing: Binary Control R-134A Refrigerant
- 285-003 Electrical: Circuit Fuses
- 280-007 Wiring Schematic Card: None, 12V Negative Ground System
- 324-062 Interior Lights: Center Mounted Dome & Door Courtesy Lights In Kick Panels
- 655-001 Door Latch: W/Manual Locks
- 756-210 Driver Seat: EZRIDER-Mid-Back Air Suspension W/Adjustable Lumbar Support
- 760-211 Passenger Seat: EZRIDER Mid-Back Non-Suspension
- 758-036 Driver Seat Cover: Vinyl W/Vinyl Insert
- 761-036 Passenger Seat Cover: Vinyl W/Vinyl Insert
- 763-011 Seat Belts: 3 Point Adjustable D-Ring Retractor, Driver & Passenger
- 532-001 Steering Column: Fixed
- 540-020 Steering Wheel: 18" Two-Spoke, Black
- 765-002 Interior Sun Visors: Driver/Passenger

INSTRUMENT PANELS & CONTROLS

- 017-016 Gauge Package: Sterling Standard Electronic Instrument Package, Standard Calibration
- 732-006 Instrument Cluster: W/Integral Gauges
- 734-013 Center Panel: Dark Taupe W/Flat Gauge Insert
- 486-001 Low Air Pressure Warning: Light & Buzzer



INSTRUMENT PANELS & CONTROLS (Continued)

- 840-001 Air System Gauge: Dual Needle Primary & Secondary Air Pressure Gauge
- 198-002 Air Restriction Indicator: Intake Mounted
- 149-015 Cruise Control: Switches In Steering Wheel Spokes
- 156-007 Starter Control: On/Run/Start/Acc.
- 811-001 Message Center: Warning Lamp/Light Bar Display, Non-Data Linked
- 160-002 Diagnostic Interface
- 844-001 Fuel Gauge: Electric
- 148-021 Preset Fast Idle
- 856-001 Water Temperature Gauge: Electric
- 830-010 Engine Hour Meter: Hobbs, Integral W/Tachometer, Oil Pressure Activated
- 852-001 Oil Pressure Gauge: Mechanical
- 746-007 Radio: Sterling AM/FM Stereo
- 750-002 Radio Speakers: two in Cab
- 752-017 CB Antenna: Multi-Band AM/FM/WB/CB Left Hand Mirror Mounted
- 810-009 Speedometer: Ametek Electronic W/Odometer (MPH)
- 812-022 Tachometer: Electronic 3500 RPM
- 883-997 Hand Control Valve: None
- 836-001 Voltmeter
- 660-008 Windshield Wiper System: Electric W/Delay
- 882-009 Parking Brake System: One Valve System W/Warning Indicator



INSTRUMENT PANELS & CONTROLS (Continued)

- 299-004 Turn Signal Switch: United Tech Self Canceling
- 298-003 Turn Signal Flasher: Heavy Duty

PAINT

- 065-000 One Solid Color Design
- 980-3F6 Cab Color: A: Imron N0006 White
- 986-020 Chassis Color: Black: High Solids Polyurethane
- 962-970 Front Wheel Color: N1047 White
- 966-970 Rear Wheel Color: N1047 White

ADDITIONAL SPECIFICATIONS

- 998-008 Factory PDI
- PGN-002 Cat EPA Upgrade

2.0 COMBINATION SEWER JET & VACUUM CLEANER SPECS

The combination sewer jet and vacuum cleaner truck shall be designed to perform cleaning and removal of sand, stone, bottles, cans, grease, sludge, and other materials from basins, pits, pump stations, tanks and sanitary or storm water drain lines. The machine must be a single engine design. It is to provide a high-pressure jet rodding system and a vacuum system for the removal of debris. It is to be truck-mounted on a chassis as further specified herein.

The anticipated life of the unit shall be a minimum of ten years, therefore the following questions must be answered by the manufacturer. Only bids from manufacturers with significant experience in the manufacturing of combination sewer jet and vacuum cleaner trucks will be considered. Please fill out the questions and request for supplemental information as indicated and return with your bid documents.



Brookville Municipal Authority  
Contract No. MA-2002-3

- How long has (your manufacturer) Vactor Manufacturing been in the business of manufacturing combination sewer jet and vacuum cleaner trucks?

30+ Years

- Is the unit bid a current production model?

X Yes        No

- How many of these units are currently in operation in the U.S. and Canada?

7000+ Units

- As a prospective bidder, please include an itemized list of components for bid tabulation and review.

- As a prospective bidder please enclose manufacturer's literature, specifications and all pertinent information concerning this bid.

- As a prospective bidder, deviations from noted standards found in this specification shall be attached and explained in complete detail, referencing this specification page no., item no., reason for deviation and benefits thereof as necessary.

- 2.1 The debris body is to be made of abrasion and corrosion resistant steel with 3/16" thickness, a minimum yield point of 50,000 PSI, and minimum tensile strength of 70,000 PSI. Mild steel of any thickness is deemed unacceptable.

- State the type of steel, yield point, and minimum tensile strength that is to be provided:

U.S. Steel 3/16" Exten, especially formulated to provide a minimum yield point of 50,000 psi & a minimum tensile strength of 70,000 psi.

The debris body is to be round for maximum strength and ease of dumping and is to have a minimum usable capacity of 9 cubic yards or 1800 gallons.

- COMPLY IN ALL RESPECTS: YES X NO

2/10



Brookville Municipal Authority  
Contract No. MA-2002-3

- 2.2 The body is to have a full-sized rear door that is hinged at the top and that is equipped with a replaceable neoprene type seal to prevent leakage. A fully enclosed hydraulic door lock system is to be mounted on a domed, double walled rear door of the debris body. The system is to be activated at the same curbside location as the debris body dump control to protect the operator from discharged materials.
- 2.3 The system will be driven by two hydraulic cylinders. The first cylinder will drive a steel rear door grabber to close and hold the door in place during the locking cycle. The second hydraulic cylinder will drive four dead bolt locking pins, no greater than 2" in diameter, into adjustable lock receivers welded to the debris body. Two pins are to be driven vertically and two pins are to be driven horizontally into the receivers, two of which are to be located at the bottom radius of the door and two of which are to be located below the center line of the door.
- 2.4 The system must deadend in a closed or open position to avoid a potential accidental discharge of materials; that is, the locking pins will remain dead bolted in the closed position in spite of any system failure or will remain in the open position, presumably after the dumping cycle at a dump site in spite of any system failure. Grabber systems that hook over pins mounted to the debris body and driven in any way by rods requiring adjustment are deemed not to meet these standards. Any system that requires manual T-clamps will be deemed to require those clamps to prevent accidental spillage and do not meet the standards set forth here.
- COMPLY IN ALL RESPECTS: YES   X   NO
- Provide a detailed description of the locking system bid with special emphasis on accidental discharge prevention features of the system:
- Pin & socket type locking mechanism as described above. Pins remain bolted even with hydraulic system failure.
- 2.5 The body is to be equipped with a load level indicator to show when the body is loaded to capacity. The rear door is to be equipped with a 6" butterfly body drain valve positioned on lower door and drain hose that will allow the operator to drain off excess liquids while retaining solids for greater on-site productivity.



Brookville Municipal Authority  
Contract No. MA-2002-3

- COMPLY IN ALL RESPECTS: YES X NO \_\_\_\_\_
- Describe the drain valve provided: \_\_\_\_\_  
6" butterfly valve, lever actuated.  
\_\_\_\_\_  
\_\_\_\_\_
- 2.6 For greater pipe storage capacity and for operator safety to avoid potential injury while removing or replacing pipe, a spring-loaded, fold down storage rack design must be provided on both the street, curb side of the debris body. Each rack must be constructed of tubular steel and afford a capacity for three 7' lengths of debris pipe. Each pipe storage position must provide protection to reduce potential damage and/or denting to the pipe.
- COMPLY IN ALL RESPECTS: YES X NO \_\_\_\_\_
- 2.7 The debris body is to be dumped by raising to a minimum 50 degree angle for ease of dumping, and it is to be equipped with a forward mounted, power up and down hydraulic dump cylinder to assure stability during the dumping cycle and to prevent the rear door from hitting the ground during dumping; preference will be given to this configuration over single action cylinders or scissors style lifts. Because all manufacturers provide raised dumping, no other dumping configuration will be deemed acceptable.
- 2.8 The debris body is to be fixed on a continuous, full-length, ladder-braced sub-frame, separate from the chassis frame, that includes as part of its components a boom pedestal and welded J-straps for water tank supports. It is to have a minimum rail height of 8 inches. Segmented frames of 4" channel steel are unacceptable. The sub-frame is to provide for a three-point mounting system of the debris body.
- COMPLY IN ALL RESPECTS: YES X NO \_\_\_\_\_
- Describe dumping angle, state whether power up/down feature is provided, describe subframe construction, water tank mounting, and whether the water supply tanks raise with the debris body:  
The debris body dumps at a 50° angle via a power up & down hydraulic hoist cylinder. The initized steel subframe accommodates the debris body, boom hydraulic system, vacuum source & holds the water tanks (aluminum) on heavy rubber isolators and j-straps. The water does not raise with the debris body.
- TS/15



Brookville Municipal Authority  
Contract No. MA-2002-3

- 2.9 To achieve material separation and to reduce the possibility of discharging material into the atmosphere, it is deemed that the vacuum system requires essential dual porting in the debris body. Outlets must be a minimum 10" in diameter. The outlets are to port out to a curved shroud that feeds into steel curved elbow with a minimum 10" inner diameter.

Stainless steel ball floats shall be incorporated into the transition system to insure maximum material separation. *mc*

- COMPLY IN ALL RESPECTS: YES   X   NO

Describe the debris body porting system provided:

The air outlets are 10" in diameter and port into an expanded  
shroud on the top of the debris body, designed to enhance free  
exhaust air.

- 2.10 Because of safety considerations, it is deemed that all dump controls, accessory controls, and any auxiliary engine gauges should be accessible close to the cab on the curbside of the vehicle.

- COMPLY IN ALL RESPECTS: YES   X   NO

- 2.11 The debris body shall incorporate a gravity drain system plumbed to the front of the vehicle with 2.5" drain line. A splash shield shall be mounted under the rear door to the main body.

- COMPLY IN ALL RESPECTS: YES   X   NO

- 2.12 The debris body shall be equipped with a body flush-out system, used to clean out the debris body after dumping the debris out. This system will be controlled from the curbside operator's station, and shall draw water from the water tanks.

- COMPLY IN ALL RESPECTS: YES   X   NO

- 2.13 The debris body and water tanks shall be combined to increase water capacity.

- COMPLY IN ALL RESPECTS: YES   X   NO



Brookville Municipal Authority  
Contract No. MA-2002-3

3.1 Water tanks must have a minimum certified capacity of 1,300 gallons of usable water. Failure to provide both the required certification and the capacity will result in the bid being rejected. The water supply is to be contained in aluminum, cylindrical, baffled tanks. The tanks must carry a minimum of a ten-year warranty against defects in workmanship and potential corrosion caused by water, sunlight, and variable weather conditions.

3.2 Further, the water supply is to be located at or below the frame rail of the truck chassis and located from behind the cab to the end of the frame rail in such fashion to assure optimum center of gravity and weight distribution from front to rear of the truck. Under no circumstances is the height of the water tanks to extend above the midline height of the debris body, nor may the tanks extend beyond the width or length of the truck.

3.3 The tanks are to be mounted on the welded J-straps of the subframe assembly. The tanks are to be interconnected with minimum 4" lines for ease of rapid filling and are to be filled from a single curb-side point equipped with an anti-siphon device, Y-pattern stainless steel strainer, and 25' of fill hose with hydrant connectors, fittings, and a hydrant wrench. Water tanks shall have a sight gauge visible on all tanks. A low-water indicator with light shall be visible to the operator.

• COMPLY IN ALL RESPECTS: YES X NO       

3.4 An additional air-gap water fill with 2.5" connector and 25' of supply hose shall be provided.

• COMPLY IN ALL RESPECTS: YES X NO       

• State certified capacity: 1300 gallons

• State certified usable amount of water:  
1300 gallons

• State estimated amount of water supply below the pump inlet: 0 gallons.

• Describe the material used for the water tank(s):

Aluminum



Brookville Municipal Authority  
Contract No. MA-2002-3

- 3.5 If the material is non-metallic, provide a manufacturer's statement of content as to repairability and composition with special attention to stabilizing agents to withstand the effects of sunlight and varying weather conditions:

N/A

- Describe the repairability of the material used and give the location and phone number of the repair facility nearest the city center where the machine will be housed and maintained:

Requires aluminum welding capability

Wack Mfg, 510 Perry Highway, Harmony, PA 724/452-6006

- Can the machine operate while a tank is being repaired?  
YES ☒ NO ☐

- Please verify that a copy of the water tank warranty will be provided? YES ☒ NO ☐

- Do the water tanks raise with the debris body during dumping? YES ☐ NO ☒

- Does the height of the water tanks extend above the midline height of the debris body?

YES ☐ NO ☒

- Do any of the water tanks extend beyond the width of the truck or the end of the truck frame?

YES ☐ NO ☒

- Describe the water tank interconnects, components and materials, and the way in which the water tanks are drained:

Large 6" and 4" interconnects move water to the pump inlet via gravity and the water tanks drain from the lowest point.



Brookville Municipal Authority  
Contract No. MA-2002-3

- 3.6 Provide drawings or charts or data on the unit bid, detailing the way in which the tanks are mounted, their location, center of gravity when empty and full, and weight distribution on front and rear axles, empty and full, and with and without a full debris complement, weighing a theoretical 2600 pounds per cubic yard of debris body capacity when filled to maximum usable volume. The volumetric water load is to be calculated at 8.4 pounds per gallon.

• COMPLY IN ALL RESPECTS: YES   X   NO       

- 4.0 The High Pressure Water Pump supplied is to be a dual-acting, single-piston pump located below the entire water tank. The pump must not require priming. A hydraulic drive, powered by the chassis engine, is preferred to belt drives and will be given preference in the final purchase decision. The pump shall have a minimum rated delivery capacity of 100 gallons per minute at 2500 psi, and it shall deliver a minimum 60 GPM at 2500 PSI at the hose reel.
- 4.1 The manufacturer shall provide results from documented flow and pressure testing for delivery at the pump discharge and at the nozzle of the hose reel to demonstrate the ability of the water pump to reach the required delivery capacity of 60 GPM at 2500 PSI.
- 4.2 The water pump must have the ability to run dry for over 30 minutes should it be accidentally left unattended, or should it be used to purge excess water from the water lines and jet rodder hose. Two 1/2" high pressure ball valves shall be installed in the water pump.



Brookville Municipal Authority  
Contract No. MA-2002-3

- \* Verify the water pump can be used for extended periods of time to purge water from the entire system of water lines, including the hose?

YES   X   NO       

MAXIMUM TIME PUMP CAN BE RUN DRY TO PURGE SYSTEM: 30 minutes

- 4.3 The following tests shall be performed by the manufacturer before delivery, and upon receipt of machine by the end user. These tests will prove out the delivery of the water pump at the hose reel. Through the use of a Flow-meter and a Pressure Gauge, the following will be documented.

AT THE END OF THE HOSE: FLOW   60  

PRESSURE   2500  

- 4.4 The pump is to be engaged or disengaged from the front control panel without damage to the pump itself or the drive system; mere bypass systems, depending on ball valves alone or a valved pump bypass of any description, will not meet this requirement.

- COMPLY IN ALL RESPECTS: YES   X   NO

- 4.5 Describe the pump provided, the drive system, and provide certified ratings and delivery of both flow and pressures at operating levels:

The water pump is a double acting, single piston pump design, hydraulically driven with an oil to water ratio of 1:1. It is driven by a hydraulic pump engaged to the chassis PTO. It is controlled by throttle movement with controls at the operator's station.

- List the manufacturer of the pump? Vactor Manufacturing

- List the RPM or strokes per minute required to provide peak flow and pressure?

13.3 strokes per minute.

- What is the standard operating procedure for draining the pump, water tanks, lines, and hose provided on the unit?

Removal of drain plugs at both the water tanks & water pump. 1/4" valve at water pump.

- 4.6 The jet rodder hose provided must have an operating pressure of 2500 PSI and a burst pressure of 6250 PSI.



Brookville Municipal Authority  
Contract No. MA-2002-3

It must have a 1" inner diameter and be 500 feet in length.

• COMPLY IN ALL RESPECTS: YES  X  NO

- 4.7 Water pump suction piping shall have a 3" Y strainer installed for additional screening and protection of the equipment from debris damage.

• COMPLY IN ALL RESPECTS: YES  X  NO

- 4.8 Due to a variety of applications for jet rodding in the public systems, a feature that provides jack-hammer action through severe obstructions is to be provided. Any system that merely depends on the use of a manual ball valve or manually manipulating the hose are unacceptable.

- Describe the features and means by which the jack-hammer action to clear obstacles is achieved:

The cycling of the water pump allows for a jack hammering effect capabilities. Water pump is reciprocating on a 1:1 ratio. Its water delivery allows for blockage removal, hill climbing & debris removal.

- 4.9 A cold weather recirculation system is to be provided on the unit to prevent freezing of the jet rodder water supply while driving to and from work sites. The system must be operable at all vehicle road speeds and while the chassis is stationary. It must be driven from a hydraulic source other than the chassis engine or via a front mounted crank shaft drive.

- 4.10 The system must be capable of recirculating a minimum of 12 gallons per minute through the entire water system, including the high pressure pump and hose reel.

• COMPLY IN ALL RESPECTS: YES  X  NO

- 4.11 The handgun hose shall be supplied on a reel which retracts the hose for storage. This eliminates the need to store the hose in the tool boxes on the truck, and to connect them when desired. The reel shall be spring retractable. The handgun shall be coupled to the retractable hose by a quick connect coupler. 50 feet of hose shall be provided on the handgun hose reel.



Brookville Municipal Authority  
Contract No. MA-2002-3

Two quick coupler connections are to be provided, one at the front of the truck and one at the rear of the truck.

• COMPLY IN ALL RESPECTS: YES   X   NO       

5.0 The front mounted hose reel is to be fixed to the truck frame on permanently mounted brackets. The reel will not require any other form of support than the frame mounting. Further, it will be mounted at a height that will assure the operator of good visibility while driving the unit. A 1/4" spun steel design is required and it should have a minimum capacity of 600 feet of 1" inner diameter jet rodder hose.

5.1 The hose reel shall be hydraulically driven. It must have a one inch rotating swivel joint that is adjustable and that has replaceable seals on the inlet line to provide free rotation of the hose reel. A cover shield must be provided to shield the operator from the dual chain and sprocket drive. It must have a full complement of controls for operation of both the reel and the jet rodder. A hand light with bumper plug is to be provided.

5.2 Additionally, the reel is to telescope and retract 15" on a straight line along the centerline axis of the truck with the reel in its fixed position parallel to the truck grill. Arced lines of travel do not meet this requirement. The reel is to rotate about the centerline on a large diameter ball bearing through 270 degrees to afford an unobstructed line along which the rodder hose can reach the working end of the boom in any of the work positions along the boom's 180 degrees of rotation. The extension will allow the operator to check fluids on tilt type cabs without tilting the reel.

• COMPLY IN ALL RESPECTS: YES   X   NO       

5.3 For operator safety and productivity, the hose reel must be equipped with controls on each side. Under no circumstances, may the reel extend beyond the safe width of the truck in any of its working positions.

• COMPLY IN ALL RESPECTS: YES   X   NO       

5.4 Describe in detail below the way in which the reel supplied for this bid is mounted, its construction, its telescoping and rotating functions, its controls, and provide a work area diagram showing it in its standard



and extended and rotated positions in conjunction with the boom supplied:

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As described on previous page.

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- 5.5 The following joysticks / knobs / gauges shall be located on the operator's station at the hose reel:

Boom Extend / Retract

Boom Direction (Left, Right, Up, Down)

Water Pump (Rodder) On / Off

Hose Reel-Out / Reel-In lever control

Hose Reel speed Control Knob

Hose Reel Telescope-in / Telescope Out

Hose Reel Rotation Lock / Unlock

Vacuum Relief

Two Hose Footage Counter

Tachometer (Chassis Engine)

• COMPLY IN ALL RESPECTS: YES X NO     

- 6.0 The vacuum system is to be provided by a positive displacement rotary lobe blower capable of 4500 CFM inlet volume and a minimum 16" Hg vacuum. To ensure longer blower life and quiet operation, the blower MUST achieve the maximum rated performance at no more than 2250 RPM's. (Model 824-16 Roots Blower is preferred).

- 6.1 A final filter must be supplied on the suction intake to limit the ingestion of solid or liquid abrasive material into the positive displacement blower. It must be positioned between the outlet of the debris body and inlet of the vacuum blower and contain a removable and cleanable stainless steel micro screen. The screen is to be no larger than 20 mesh and a minimum of 14" in diameter and 20" long to allow for maximum protection and air flow; it is to be vertically mounted.



Brookville Municipal Authority  
Contract No. MA-2002-3

- 6.3 A tapered cone (cyclone) centrifugal separator shall be mounted in-line between the debris body and the vacuum system. It is used to aid in the process of dust separation and to prevent ingestion of 50 micron or larger particles into the vacuum pump/compressor. A dust box with an access door for clean out shall be provided

• COMPLY IN ALL RESPECTS: YES X NO     

- 6.4 The debris body is to be equipped with a dual stainless steel float ball system to stop debris body filling when the body is full and to prevent debris body carry over into the vacuum inlet during transportation. The float balls must be a minimum of 10" in diameter and enclosed in an expanded stainless steel screen to prevent large material from wedging between the ball and seat.

- 6.5 A hotshift blower drive system shall be included with a transfer case, air shift actuator controls, vacuum relief capability and controls front reel mounted

• COMPLY IN ALL RESPECTS: YES X NO     

- 6.6 The blower must be driven by the chassis engine via the transmission drive shaft and a heavy duty split shaft transfer case without the use of V-belts or any other type of belt; this design will be given preference. It is to be equipped with a horizontal silencer with an exhaust outlet above the cab and a protective rain cap. PTO shall be activated by the use of an electric over air operating device. The blower must contain an extended warranty upon delivery and be included in the bid price.

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- 6.7 Provide the following information on the positive displacement blower:

• Rated CFM & Pressure	<u>4500 CFM @ 0" HG</u>
• Operating CFM & Pressure	<u>3650 CFM @ Rated Max HG</u>
• RPM of Blower @ Operating Level	<u>2250 RPM</u>
• RPM of Drive Engine @ Operating Level	<u>2250 RPM (est)</u>



Brookville Municipal Authority  
Contract No. MA-2002-3

- BHP Required to Drive Blower 170 HP
- Calculated Horsepower Reserve 160 HP
- Blower Manufacturer's Curves & Performance Sheet Included in data sheets
- Standard Warranty Period & Terms One Year
- Extended Manufacturer's Warranty See Attached Warranty Sheet

6.8 Due to performance and maintenance considerations, it is required that each bidder will provide the best drive system available and listed or offered as an option in any sales literature or current price lists. Direct drive systems are preferred. Describe the drive system being provided:

Blower is driven by the chassis engine via the drive shaft  
through a split shaft transfer case.

6.9 The vacuum relief system control is to be located at the operator's station.

• COMPLY IN ALL RESPECTS: YES X NO       

7.0 Front mounted boom and front mounted hose reel are required because of safety and operation considerations and because all manufacturers are known to provide such a configuration. Because of these same considerations the boom must not raise with the debris body during dumping.

7.1 The boom shall be constructed using an anchored steel tube for the outer sleeve and an inner 8" inner diameter suction tube constructed of the same material. It must have a smooth steel elbow; welded, segmental elbows are unacceptable because of potential wear factors and disruption of the airstream. The boom is to provide a minimum of 180 degrees of rotation with



Brookville Municipal Authority  
Contract No. MA-2002-3

275" of reach off the center line of the unit and provide a minimum of 474 square feet of work area.

- 7.2 The boom shall telescope a minimum of 8 feet. All actions are to be hydraulically controlled; this system will be given preference over chain and sprocket systems because of maintenance considerations. The boom is to have an electric over hydraulic solenoid system with a means of adjusting speeds of the boom actions; there must be an override on the hydraulic circuit to relieve the boom should it fail at any telescoped or rotated positions; mere manual relief by loosening a hydraulic coupling is unacceptable.
- 7.3 It is to be hydraulically driven up, down, left, right, extend, and retract and controlled with a remote push button control station with a cable connected to the lower frame of the hose reel.
- 7.4 A front-mounted pendant control for the boom is to be supplied, allowing the operator to remotely control the direction of the boom (In/Out, Up/ Down, Left/ Right). The pendant control will plug into the base of the Hose Reel. Joy stick control shall be provided at the operator's station.
- 7.5 Additionally, all inlet hose and tubing must have a minimum 8" inner diameter. Sufficient pipe to vacuum to depths or lengths of 30 feet is to be supplied and is to include a specially tipped vacuum nozzle. All connections between the debris body and vacuum system must be self-adjusting, pressure fitting couplings.

• COMPLY IN ALL RESPECTS: YES X NO     

- Describe the construction, including materials, of the boom, its controls and functions, and provide a work area diagram showing the boom in its stored and fully telescoped and rotated working positions:

Anchored steel tube for all parts of the boom. Joystick and pendants  
controls are provided. Work area drawings are provided in data sheets.

- 8.0 Two halogen boom lights shall be mounted on above the vacuum hose at the steel elbow. The lights are provided as a safety feature to illuminate the work area above ground when needed. A strobe light shall be mounted on the front of the debris body/module with a limb guard for protection. A handlight with bumper plug connection shall be supplied. WCL



Brookville Municipal Authority  
Contract No. MA-2002-3

- COMPLY IN ALL RESPECTS: YES   X   NO
- 8.1 A split arrow traffic controller-two piece lights shall be rear mounted.

- COMPLY IN ALL RESPECTS: YES   X   NO
- 9.1 Maintenance is a critical concern, therefore electrical and hydraulic systems are critical. The electrical system provided is to meet NEMA 4 standards throughout the complete wiring arrangement. Partial systems are unacceptable. A complete wiring diagram is to be provided with the unit. All body lights are to be shock mounted and vapor sealed. Each wiring circuit is to be grounded. The unit is to be equipped with circuit breakers enclosed in a sealed panel.

- 9.2 Adequate hydraulic reserves are to be provided to operate all hydraulic functions at operating pressures and temperatures, and there must be a provision in the design of the unit to assist maintenance or operations personnel in the field to overcome hydraulic failure via a relief mechanism. All hydraulic hose and couplings are to be of industrial grade and meet all pressure and temperature requirements to provide complete safety to operating and maintenance personnel.

- COMPLY IN ALL RESPECTS: YES   X   NO
- 9.3 List the daily, weekly, and monthly recommended maintenance procedures on the unit being bid:

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See enclosed data sheets.

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- 10.0 The cab is to be painted with White Centari or equal paint. All modules are to be painted prior to assembly. The module shall be painted with a contrasting color selected by the Owner prior to fabrication. The rear door shall have 3 stripes of reflective tape chevron style.

- COMPLY IN ALL RESPECTS: YES   X   NO
- 11.0 The following miscellaneous options shall be included in the base price:

- 1) Tow hooks mounted at the rear of the chassis;



Brookville Municipal Authority  
Contract No. MA-2002-3

2) Electronic back-up alarm;

*mc*

3) The following tool boxes shall be provided:

- Tool Tray Under Blower

*check*

- 36" x 18" x 18" Aluminum Tool Box

*mc*

- 24" x 18" x 18" Aluminum Tool Box

4) A lubrication manifold shall be installed allowing greasing of boom lift and swing cylinders, float level indicator, top rear door hinges, and body hoist cylinder;

5) Two 8"x 5' aluminum pipe extensions with clamps; and

6) A supplementary braking system used to help slow the truck must be installed. This slowing power, sometimes referred to as a Jake Brake, is achieved by restricting the flow of exhaust gasses and increasing back pressure inside the engine. This increased back pressure creates resistance against the pistons in the engine, slowing the crankshaft's rotation and ultimately helping to slow the truck.

*check*

+ + END OF SECTION + +